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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,012	02/06/2001	Christophe Le Roy	ATOCM-197	5473

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EXAMINER

PATTERSON, MARC A

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/777,012

Applicant(s)

LE ROY ET AL.

Examiner

Marc A Patterson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 21-32 and 35-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-32 and 35-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### WITHDRAWN REJECTIONS

1. The 35 U.S.C. 112 second paragraph rejections of Claims 21 – 32 35 – 42, of record on page 3 of the previous Action, are withdrawn.

The 35 U.S.C. 102(b) rejection of Claims 21, 27, 31 – 34 and 40 – 42 as being anticipated by Beuzelin et al (U.K. Patent No. 2288177), of record on page 4 of the previous Action, is withdrawn.

The 35 U.S.C. 103(a) rejection of Claims 22 – 26, 28 and 39 – 40 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177), of record on page 5 of the previous Action, 35 U.S.C. 103(a) as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Zhang et al (U.S. Patent No. 5,516,583), of record on page 8 of the previous Action and 35 U.S.C. 103(a) rejection of Claims 30 and 35 – 37 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Melot et al (U.S. Patent No. 5,998,545), of record on page 8 of the previous Action, are withdrawn.

### NEW REJECTIONS

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 21 – 28, 31 – 32 and 38 – 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Hughes et al (U.S. Patent No. 5,705,565).

With regard to Claim 21, Beuzelin et al disclose a structure comprising, successively, a first layer of high density polyethylene, a layer of binder, and a second layer of ethylene vinyl alcohol (page 13, line 11 and lines 16 – 23); the binder is a polyolefin comprising high density polyethylene and low density polyethylene (page 9, lines 7 – 19) grafted with an unsaturated carboxylic acid (page 5, lines 1 – 29; page 6, lines 1 – 4), and the structure comprises a third layer of binder (page 13, line 11); the structure therefore comprises a third layer of a mixture of polyamide and polyolefin (bonding the ethylene vinyl alcohol layer to a polystyrene layer; page 13, lines 11 – 15) Beuzelin et al fail to disclose a binder which is a mixture of the polyolefin and a polyamide.

Hughes et al teach that a composition comprising high density polyethylene and a low density polyethylene is equivalent to a composition comprising high density polyethylene and low density polyethylene and polyamide (column 4, lines 62 – 67; column 5, lines 1 – 23) as a binder layer (tie layer; column 6, lines 3 – 12) between high density polyethylene and ethylene vinyl alcohol (column 6, lines 3 – 12) for the purpose of for the purpose of obtaining a binder having desirable adhesive properties (column 6, lines 3 – 12). The desirability of providing for a binder which is a mixture of polyolefin and a polyamide in Beuzelin et al, which is a binder layer, would therefore be obvious to one of ordinary skill in the art.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a mixture of polyolefin and a polyamide in Beuzelin et al in order to obtain a binder having desirable adhesive properties as taught by Hughes et al.

With regard to Claim 22, Beuzelin et al fail to disclose two layers of binder between the ethylene – vinyl alcohol layer and polystyrene layer. However, Beuzelin et al disclose one layer of binder between the ethylene – vinyl alcohol layer and polystyrene layer, as discussed above. It would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to have provided for additional layers, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

With regard to Claims 23, 26 and 38 – 39, Beuzelin et al disclose a third layer which comprises a mixture of polyethylene and very low density polyethylene having a density of between 0.880 and 0.970 (page 9, lines 7 – 19) and a melt flow index of 7 g/10 min (page 22, lines 5 – 8); Beuzelin et al fail to disclose a polymer which comprises a third layer which comprises 70 – 95% of a mixture of polyethylene and very low density polyethylene and 5 – 30 parts by weight per hundred of a polyethylene with a density 0.930 to 0.950 g/cm<sup>3</sup>.

However, Beuzelin et al disclose a layer which comprises at least 1% of a mixture of polyethylene and very low density polyethylenes having a density of between 0.880 and 0.970 (the layer comprises a mixture of polyethylene and very low density polyethylenes having a density of between 0.880 and 0.970; page 9, lines 1 – 19) and a content of grafted unsaturated carboxylic acid of 0.005 to 5% by weight of grafted

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carboxylic acid (page 5, lines 17 – 24). Therefore, the amounts of the polyethylenes in the mixture and their densities and the amount of grafted carboxylic acid would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the amount of the polyethylene mixture and the amount of grafted carboxylic acid, since the amount of the polyethylene mixture and the amount of grafted carboxylic acid would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Beuzelin et al *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

With regard to Claim 24, the density of the binder disclosed by Beuzelin et al is between 0.880 and 0.970 g/cm<sup>3</sup> (page 9, lines 7 – 19).

With regard to Claim 25, the polyethylene disclosed by Beuzelin et al is linear low density polyethylene (page 9, lines 7 – 19).

With regard to Claim 27, the binder disclosed by Beuzelin et al is a polyethylene grafted with maleic anhydride (page 5, lines 6 – 11), and a melt flow index of 7 g/10 min (page 22, lines 5 – 8) and a density between 0.920 and 0.930 g/cc (page 22, lines 5 – 8).

With regard to Claim 28, the grafted polyethylene is mixed with ethylene – vinyl acetate copolymer (page 11, lines 11 – 14); both the grafted polyethylene and ethylene – vinyl acetate have densities between 0.880 and 0.970. Beuzelin et al do not teach that the ethylene vinyl acetate is grafted; the claimed aspect of the grafted polyethylene being ‘diluted with an ungrafted polyethylene’ therefore reads on Beuzelin et al. Beuzelin et al fail to disclose from 70 to 98 % by weight non – grafted polyethylene.

However, Beuzelin et al disclose at least 1% by weight non – grafted polyethylene by weight (the mixture comprises non – grafted polyethylene; page 11, lines 11 – 14. Therefore, the amount of non – grafted polyethylene would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the amount of non – grafted polyethylene, since the amount of non – grafted polyethylene would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Beuzelin et al *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

With regard to Claims 31 – 32, the third layer disclosed by Beuzelin et al comprises a high density polyethylene and very low density polyethylene (page 9, lines 7 – 19) cografted with an unsaturated carboxylic acid (fumaric acid; page 5, lines 12 – 29).

With regard to Claims 40 – 42, Beuzelin et al discloses a food container which contains a fluid (air) consisting of the structure (page 15, lines 16 – 23); the third layer is therefore in direct contact with the fluid which is contained.

With regard to Claims 43 – 44, Hughes et al fail to teach a structure in which the third layer comprises 60% to 70% by weight of the polyamide, 5 – 10% by weight of the grafted polymer and the remainder high density polyethylene. However, Hughes et al teach a structure in which the third layer comprises at least 1% by weight of the polyamide and 1% by weight of the grafted polymer (the layer comprises polyamide, grafted polymer and high density polyethylene, as discussed above). Therefore, the amounts of polyamide, grafted polymer and high density polyethylene would be readily determined through routine optimization by one having ordinary skill in the art depending

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on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the amounts of polyamide, grafted polymer and high density polyethylene, since the amounts of polyamide, grafted polymer and high density polyethylene would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Hughes et al, in the absence of unexpected results. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

With regard to Claim 45, Hughes et al teach the use of a polyamide comprising polyamide 6,6 (column 15, lines 1 – 20) the claimed aspect of the polyamide comprising a polyamide 6/6,6 copolymer which is a copolymer of caprolactam, adipic acid and hexamethylenediamine therefore reads on Hughes et al.

With regard to Claim 46, Beuzelin et al fail to disclose a structure having a first layer thickness of between 2 and 10 mm and a second layer thickness between 30 and 500  $\mu\text{m}$ . However, Beuzelin et al disclose a structure having a layer thickness of 100 to 1000  $\mu\text{m}$  and a total thickness of 100  $\mu\text{m}$  to 3 mm (page 14, lines 24 – 29; page 15, lines 1 – 12).

4. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Hughes et al (U.S. Patent No. 5,705,565) and further in view of Zhang et al (U.S. Patent No. 5,516,583).

Beuzelin et al and Hughes et al disclose a laminate structure comprising a layer of binder as discussed above. The binder consists of very low density polyethylene (page 9, lines 7 – 19 of Beuzelin et al), 5 – 35% by weight grafted polyethylene and 5 – 45% by



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weight polystyrene elastomer (page 3, lines 18 – 24; page 10, lines 24 – 29; page 11, lines 1 – 14 of Beuzelin et al). Beuzelin et al fail to disclose a polyethylene which is a metallocene polyethylene.

Zhang et al teach the use of metallocene polyethylene in the making of an adhesive (column 4, lines 17 – 30 of Zhang) for the purpose of making an adhesive having excellent extrudability (column 2, lines 24 – 32 of Zhang). The desirability of providing for a metallocene polyethylene and Beuzelin et al and Hughes et al, which comprises an adhesive, would therefore be obvious to one of ordinary skill in the art in view of Zhang et al.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for metallocene polyethylene in Beuzelin et al and Hughes et al in order to make an adhesive having excellent extrudability as taught by Zhang et al.

5. Claims 30 and 35 – 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Hughes et al (U.S. Patent No. 5,705,565) and further in view of Melot et al (U.S. Patent No. 5,998,545).

Beuzelin et al and Hughes et al disclose a laminate structure comprising a layer of binder comprising polyamide as discussed above. With regard to Claims 30 and 35, Beuzelin et al fail to disclose a polyamide which comprises a copolymer comprising polyamide 6 and polytetramethylene glycol blocks.

Melot teaches the grafting of styrene – polyolefin blends with copolymers having polyamide 6 blocks and polytetramethylene glycol blocks (column 4, lines 15 – 19 of

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Melot) for the purpose of making films having good stability after extrusion (column 4, lines 59 – 67 of Melot). The desirability of providing for polyamide which comprises a copolymer comprising polyamide 6 and polytetramethylene glycol blocks in Beuzelin et al and Hughes et al, which comprises a styrene – polyolefin blend, would therefore be obvious to one of ordinary skill in the art.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a copolymer having polyamide 6 blocks and polytetramethylene glycol blocks in Beuzelin et al and Hughes et al in order to make films having good stability after extrusion as taught by Melot.

With regard to Claim 36, the binder disclosed by Beuzelin et al and Hughes et al comprises a mixture of polyethylene and very low density polyethylene and an ethylene – alkyl methacrylate – maleic anhydride copolymer (page 5, lines 6 – 27 of Beuzelin et al).

With regard to Claim 37, the binder disclosed by Beuzelin et al and Hughes et al comprises two functionalized polyolefins comprising at least 40% ethylene (low density polyethylene and linear low density polyethylene; page 9, lines 7 – 19 of Beuzelin et al); the claimed aspect of the polyolefins comprising 50% ethylene therefore reads on Beuzelin et al and Hughes et al; the binder also comprises isoprene rubber (page 8, lines 10 – 14) and is therefore crosslinkable.

#### ANSWERS TO APPLICANT'S ARGUMENTS

6. Applicant's arguments regarding the 35 U.S.C. 112 second paragraph rejections of Claims 21 – 32 and 35 – 42, 35 U.S.C. 102(b) rejection of Claims 21, 27, 31 – 32 and 40 – 42 as being anticipated by Beuzelin et al (U.K. Patent No. 2288177), 35 U.S.C. 103(a)

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rejection of Claims 22 – 26, 28 and 39 – 40 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) and 35 U.S.C. 103(a) rejection of Claims 30 and 35 – 37 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Melot et al (U.S. Patent No. 5,998,545), of record in the previous Action, have been considered and have been found to be persuasive. The rejections are therefore withdrawn. The new 35 U.S.C. 103(a) rejection of Claims 21 – 28, 31 – 32 and 38– 46 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Hughes et al (U.S. Patent No. 5,705,565), 35 U.S.C. 103(a) rejection of Claim 29 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Hughes et al (U.S. Patent No. 5,705,565) and further in view of Zhang et al (U.S. Patent No. 5,516,583) and 35 U.S.C. 103(a) rejection of Claims 30 and 35 – 37 as being unpatentable over Beuzelin et al (U.K. Patent No. 2288177) in view of Hughes et al (U.S. Patent No. 5,705,565) and further in view of Melot et al (U.S. Patent No. 5,998,545) above are directed to amended Claims 21 – 32 and 35 – 42 and newly submitted Claims 43 – 46.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (703) 305-3537. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (703) 308-4251. FAX communications should

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be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.

*Marc Patterson*  
Art Unit 1772

*[Signature]*  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1772

10/29/03